

# **Draft Staff Report**

**2002 Update:**

## **Clean Water Act Section 305(b) Report and Section 303(d) List of Impaired Waters**

**Los Angeles Region**

**Prepared by  
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# **1 Introduction**

Each of California's nine Regional Water Quality Control Boards has been asked to assist the State Board in preparing a statewide water quality assessment as required by section 305(b) of the Clean Water Act and updating the State's Clean Water Act section 303(d) list (SWRCB, 2001). The statewide water quality assessment (or 305(b) Report) summarizes the extent to which beneficial uses of waterbodies in the state are being supported. The 303(d) list is a subset of waterbodies assessed in the 305(b) Report, which have been identified as not supporting one or more of the beneficial uses designated for the waterbody. In other words, the 303(d) list identifies surface waters that do not or are not expected to attain water quality standards.

## **1.1 Public Process**

Staff of the California Regional Water Quality Control Board, Los Angeles Region (Regional Board) began the process for developing the 303(d) list by conducting two solicitations for data and information. The first was a targeted solicitation in fall 2000 and the second was a solicitation to the Regional Board's entire Basin Planning mailing list in spring 2001. The spring solicitation lasted from March 6, 2001 to May 15, 2001 (LARWQCB, 2001). On March 14, 2001, the State Water Resources Control Board (State Board) also sent a letter to interested persons requesting that data be sent to the Regional Boards to aid in updating the 303(d) list. Approximately 35 discrete datasets or sources of information were received; major NPDES dischargers and particularly Publicly Owned Treatment Works (POTWs) submitted the majority of these. See section 5 for a list of reports, information and data used in the 2002 water quality assessment and update of the 303(d) list.

Regional Board staff also solicited comments on the proposed assessment methodology to be used in the 2002 update of the 303(d) list. Staff presented the proposed methodology as an information item at a special meeting of the Regional Board on May 31, 2001. Interested persons were given until June 30, 2001 to provide comments on the proposed methodology. Staff also gave a presentation on the proposed methodology at a regularly scheduled meeting of the Southern California Association of POTWs (SCAP) and presented an early draft of the 2002 update to the 303(d) list to SCAP on October 16, 2001. Comments received by the Regional Board will be included in the submittal package to State Board.

Finally, staff held a public workshop on November 19, 2001 to discuss proposed changes to the 1998 303(d) list and presented staff's recommended changes to the Regional Board as an Information Item at a Board meeting on December 13, 2001.

## **1.2 Overview of Report**

The update to the 1998 303(d) list includes recommendations for new listings of water bodies and pollutants as well as for de-listings. This document describes the methodology that was used to complete the regional assessment of water quality and to identify recommended changes to the 303(d) list of impaired surface waters within the Los Angeles Region. The specific factors for each recommended change to the 1998 303(d) list are described in a Fact Sheet (see attached). Fact sheets are not included for water bodies where there was insufficient data to complete an assessment or if new data support existing listings.

## **2 Factors Considered in Recommending Changes to the 303(d) List**

### **2.1 Listing Factors**

Water bodies and associated pollutants were recommended for addition to the 303(d) list if any one of the following factors was met:

1. Effluent limitations or other pollution control requirements (e.g., BMPs) are not stringent enough to assure protection of beneficial uses and attainment of water quality objectives outlined in the Basin Plan and in statewide water quality control plans, including those implementing SWRCB Resolution No. 68-16 “Statement of Policy with Respect to Maintaining High Quality of Waters in California.”
2. Fishing, drinking water, or swimming advisory currently in effect.
3. Beneficial uses are impaired or are expected to be impaired within the listing cycle (i.e., in the next four years). Impairment is based upon evaluation of chemical, physical, or biological integrity. Impairment was determined based upon physical/chemical monitoring, bacteriological monitoring, toxicity tests, bioassessment and/or habitat monitoring, and other monitoring data such as fish tissue data, sediment chemistry and sediment toxicity. Applicable Basin Plan water quality objectives, Federal water quality criteria (e.g., CTR criteria), US EPA recommended water quality criteria, or criteria or guidelines developed by other state or federal agencies determine the basis for impairment status.
4. The water body is on the previous 303(d) list and either (a) monitoring continues to demonstrate a violation of objectives or (b) monitoring has not been performed.
5. Data indicate tissue concentrations in consumable body parts of fish or shellfish exceed applicable tissue criteria or guidelines. Criteria used to assess tissue impairments were Maximum Tissue Residue Levels (MTRLs) for protection of human health and National Academy of Science (NAS) guidelines for predator protection.

### **2.2 Delisting Factors**

Water bodies were recommended for removal from the list for specific pollutants or stressors if either of the following two factors was met:

1. The original listing was based on exceeding EDLs (Elevated Data Levels) or other assessment guidelines not considered sufficient for determining water quality impairments.
2. It has been documented that the objectives are being met and beneficial uses are not impaired based upon an evaluation of available monitoring data.

## **3 Assessment Criteria**

The Regional Board's water quality assessment follows USEPA (1997) guidance as outlined in the *Guidelines for Preparation of the Comprehensive State Water Quality Assessments (305(b) Reports) and Electronic Updates: Supplement* and generally follows the methodology used in the 1996 water quality assessment prepared by the Regional Board (LARWQCB, 1996). The USEPA guidance specifies that seven broad beneficial use

categories should be assessed in the 305(b) Reports; the federal beneficial uses evaluated in this assessment report and the corresponding Regional beneficial uses and water quality objectives used to assess these uses are listed in Table 3-1. Several regional beneficial uses are not assessed in this report including aquaculture, hydropower generation, freshwater replenishment, navigation, industrial process supply and industrial service supply.

Each of these federal beneficial uses is assessed according to the following designations: fully supporting, fully supporting but threatened, partially supporting, not supporting, and not assessed. The fully supporting but threatened category relates to waterbodies where a use is supported but may not be in the future unless pollution prevention or control action is taken. Waterbodies that are assessed as fully supporting but threatened, partially supporting, or not supporting are considered "impaired" and are proposed for listing on the federal Clean Water Act 303(d) list of impaired waters.

Table 3-1. Correlation between Federal and Regional Beneficial Uses and Associated Water Quality Objectives

Federal Beneficial Use	Regional Beneficial Use	Water Quality Objectives
Fish consumption	Commercial and sport fishing	Fish consumption advisories; tissue MTRLS
Shellfish harvesting	Shellfish harvesting	Shellfish harvesting advisories
Aquatic life	Warm freshwater habitat Cold freshwater habitat Estuarine habitat Wetland habitat Marine habitat Wildlife habitat Preservation of biological habitat Rare, threatened, or endangered species Migration of aquatic organisms Spawning, reproduction, and/or early development	CTR acute and chronic aquatic life criteria; ammonia; DO; pH; solid, suspended & settleable material; floating material; water column toxicity; tissue MTRLS; sediment ERM and PEL guidelines; sediment toxicity; benthic infauna
Swimming or primary contact recreation	Water contact recreation	Total coliform; fecal coliform; beach closures; beach postings
Secondary contact recreation	Non-contact recreation	Fecal coliform
Drinking water supply (raw water)	Municipal and domestic supply Ground water recharge	Title 22 Primary MCLs; nitrogen species
Agriculture	Agricultural supply	Water quality objectives from Table 3-8

When comparing data against standards, the "worst case approach" is used. That is, if one parameter, such as ammonia, dissolved oxygen or a trace metal, indicates impairment for a particular use, the waterbody is designated as impaired for the use affected by this parameter.

For example, a waterbody that is not supporting the aquatic life use due to high ammonia concentrations and is partially supporting the use due to elevated metal concentrations would be given an overall classification of "not supporting."

Each watershed in the region is divided into waterbody reaches (a specified segment of river or creek) and lakes or reservoirs that match those designated in the 1994 Water Quality Control Plan (hereafter referred to as Basin Plan). The one exception to this is in the Calleguas Creek watershed, where through the TMDL process the reaches have been redefined (see Appendix A for a description and map of the new reach definitions). Not all reaches had sufficient data to assess all uses, and in many cases no uses could be assessed for a particular reach. If there were multiple sampling stations within a reach, the data were aggregated and analysis was performed for the entire reach. Therefore, in general, entire reaches are assessed rather than portions of a reach.

To aid in future assessments, staff has identified potential sources of pollutants to the extent possible. However, for many waterbodies, data are not sufficient to link specific sources to specific pollutants.

Some beneficial uses, notably agriculture and in some cases aquatic life and contact recreation, are impaired due to constituents that have naturally high concentrations within a watershed or subwatershed. Examples of these constituents include total dissolved solids, chlorides, boron and sulfate that are leached from rock formations. In some lakes and estuaries, coliform counts may be high due to a large population of waterfowl. Though natural sources may be contributing to the impairment - not enough information is available at this point to classify any of the affected uses as "unattainable" – therefore, water bodies are still listed as impaired even if the source is likely natural. The source of these impairments will be carefully evaluated during the TMDL process.

The US EPA *Guidelines for Preparation of the Comprehensive State Water Quality Assessments (305(b) Reports): Supplement* (1997) provides formulas for conducting assessment of five of the 305(b) beneficial uses (assessment methodologies are not given for the secondary contact recreation use or agriculture use). The Regional Board followed US EPA guidelines where such guidelines were applicable. These guidelines are described below. Additional guidelines and criteria were developed to assess other beneficial uses (agriculture and non-contact recreation) and for other data types (i.e., tissue, sediment, benthic community, water column toxicity) not addressed in the 1997 guidelines. A summary of the guidelines used in this assessment is presented below.

For water chemistry and bacteriological data, a minimum requirement of ten data points over a three-year period was determined to be necessary for conducting an assessment of any reach/pollutant combination. For tissue, sediment, bioassessment and toxicity data, a weight of evidence approach was used, as described below.

### 3.1 Aquatic Life Assessment Guidelines

Aquatic life use support can be determined based on *bioassessments*, *habitat assessments*, *toxicity assessments* and/or *physical/chemical data*.

Most of the aquatic life use support assessments in the Los Angeles Region are based on physical and chemical water, as well as sediment, toxicity and bioaccumulation data. Physical and chemical data (water column) includes toxic substances (priority pollutants, chlorine and ammonia) and conventional constituents or stressors (dissolved oxygen, pH, and temperature). The assessment guidelines, based on USEPA's guidance document, are shown in Table 3-2. Regional Board staff developed additional guidelines for tissue, sediment and benthic community data lacking detailed US EPA guidelines. These are also described below.

Water chemistry objectives for aquatic life use support are drawn from the region's 1994 Basin Plan and the California Toxics Rule (CTR). Note that the metals data are compared to dissolved criteria, where data were expressed as total recoverable a conversion factor was used to determine the dissolved fraction. In addition, metals criteria in the CTR are hardness dependent; therefore, the event-specific hardness is used to determine the appropriate limit. If no hardness data were available, the default hardness value of 400 mg/L was used.

The Regional Board has recently initiated a comprehensive regional bioassessment monitoring program, known as the Surface Water Ambient Monitoring Program (SWAMP) and expects to use data collected under this program in future assessments. However, for this assessment, the Regional Board used best professional judgement to indicate only a few localized habitat-related problems such as areas of high sedimentation and impairment of benthic communities.

Table 3-2. Assessment Guidelines for Aquatic Life Use Support (USEPA, 1997)

Assessment Designation	Assessment Guidelines
<b>Bioassessment</b>	
Fully supporting	Reliable data indicates functioning, sustainable biological communities (e.g., macroinvertebrates, fish, or algae) none of which has been modified significantly beyond the natural range of the reference condition.
Partially supporting	At least one assemblage (e.g., macroinvertebrates, fish, or algae) indicates moderate modification of the biological community compared to the reference condition.
Not supporting	At least one assemblage indicates nonsupport. Data clearly indicate severe modification of the biological community compared to the reference condition.
<b>Fish tissue data</b>	
Fully supporting	Reliable data indicates fish tissue concentrations below human health and/or predator risk thresholds.
Partially supporting	No guideline

<b>Assessment Designation</b>	<b>Assessment Guidelines</b>
Not supporting	Data indicates fish tissue concentrations above human health and/or predator risk thresholds.
<b><i>Habitat assessment</i></b>	
Fully supporting	Reliable data indicate natural channel morphology, substrate composition, bank/riparian structure, and flow regime of region. Riparian vegetation of natural types and of relatively full standing crop biomass (i.e., minimal grazing or disruptive pressure).
Partially supporting	Modification of habitat slight to moderate usually due to road crossings, limited riparian zones because of encroaching land use patterns, and some watershed erosion. Channel modification slight to moderate.
Not supporting	Moderate to severe habitat alteration by channelization and dredging activities, removal of riparian vegetation, bank failure, heavy watershed erosion or alteration of flow regime.
<b><i>Aquatic life use support: Aquatic and/or sediment toxicity data</i></b>	
Fully supporting	No toxicity noted in either acute or chronic tests compared to controls or reference conditions.
Partially supporting	No toxicity noted in acute tests, but may be present in chronic tests in either slight amounts and/or infrequently within annual cycles.
Not supporting	Toxicity noted in many tests and occurs frequently.
<b><i>Aquatic life use support: Water column toxic substances (priority pollutants listed in the California Toxics Rule, trace metals, ammonia)</i></b>	
Fully supporting	For any one pollutant, no more than 1 violation of chronic criteria and no more than 1 violation of acute criteria within a 3-year period based on at least 10 grab or 1-day composite samples. If fewer than 10 samples are available, then best professional judgement is used considering the number of pollutants having violations and the magnitude of the exceedance(s).
Partially supporting	For any one pollutant, acute or chronic criteria exceeded more than once within a 3-year period, but in <= 10 percent of samples.
Not supporting	For any one pollutant, acute or chronic criteria exceeded in > 10 percent of samples.
<b><i>Aquatic life use support: Water column conventional constituents and stressors (DO, pH)</i></b>	
Fully supporting	For any one pollutant or stressor, criteria exceeded in <= 10 percent of measurements.
Partially supporting	For any one pollutant or stressor, criteria exceeded in 11 to 25 percent of measurements.
Not supporting	For any one pollutant or stressor, criteria exceeded in > 25 percent of measurements.



### 3.1.1 Aquatic life assessment guidelines: Tissue, sediment and benthic community data

Lacking US EPA guidelines, the Regional Board developed assessment guidelines for sediment chemistry, sediment toxicity, benthic infaunal community and bioaccumulation (tissue) data for the purposes of this water quality assessment report. These general guidelines are described below and in Table 3-3. The primary sources of monitoring data were the Bay Protection and Toxic Cleanup Program (BPTCP) database, the State Mussel Watch Program (SMW) database and the Toxic Substances Monitoring Program (TSM) database. The BPTCP database provided primarily sediment chemistry, sediment toxicity and benthic infaunal community data. The SMW database provided primarily tissue contaminant levels from mussels (either transplanted or resident species) and limited sediment chemistry data. The TSM database provided primarily tissue contaminant levels from various fish species.

Special studies provided additional monitoring data for Marina del Rey (The Marine Environment of Marina del Rey Harbor, Report to the Department of Beaches and Harbors, County of Los Angeles by Aquatic Bioassay and Consulting Laboratories, July 1995-June 1996; July 1996-June 1997; July 1997-June 1998; July 1998-June 1999), Los Angeles River Estuary (Final Environmental Assessment for Los Angeles River Estuary Maintenance Dredging, Long Beach California, Prepared by Department of the Army, Corps of Engineers, Los Angeles District, July 1997; Results of Physical, Chemical and Bioassay Testing of Sediments Collected from the Los Angeles River Estuary, Report to US Army Corps of Engineers, Los Angeles District by MEC Analytical Systems, September, 1998), Ballona Creek Estuary (Report of Testing of Sediments Collected from Marina del Rey Harbor, California, Submitted to US Army Corps of Engineers, Los Angeles District by MEC Analytical Systems, February 1998; February 1999) and Port Hueneme (The Port of Hueneme, California, Deep Draft Navigation Feasibility Study, Final Feasibility Report, US Army Corps of Engineers, Los Angeles District, August 1999).

BPTCP, SMW and TSM data not previously reviewed for the 1996 Water Quality Assessment (the last comprehensive, region-wide assessment) were included in the current assessment. Therefore, in general, monitoring data from 1994 through 1998 comprised the main source of information reviewed for the assessment. Preliminary data from the SMW and TSM programs for 1999 and 2000 were not included in this review, since quality control/quality assessment review of these data has not been completed. Monitoring data from the Bight98 coastal ocean monitoring program were not included in this review, since the final reports from the study have not been completed and the data have not been released to the public.

Nearly all of the sediment toxicity data reviewed was generated by the BPTCP. Only sediment toxicity test results based on amphipod survival (using either Rhepoxynius abronius or Eohaustorius estuarius) were used for the assessment. Sediments were characterized as “toxic” if there was a significant difference in mean survival between a sample and the control and if the magnitude of this difference was biologically significant (e.g., 20 % difference in survival between sample and control) (Sediment Chemistry, Toxicity and Benthic Community Conditions in Selected Water Bodies of the Los Angeles Region, Final

Report to California State Water Resources Control Board, Bay Protection and Toxic Cleanup Program by California Department of Fish and Game, August 1998).

Nearly all of the benthic infaunal community data also was generated by the BPTCP. The health of the benthic community was evaluated through the use of a Relative Benthic Index (RBI) developed for the program (Sediment Chemistry, Toxicity and Benthic Community Conditions in Selected Water Bodies of the Los Angeles Region, Final Report to California State Water Resources Control Board, Bay Protection and Toxic Cleanup Program by California Department of Fish and Game, August 1998). Calculated RBI values range from 0.00 (most impacted) to 1.00 (least impacted). The benthic infaunal community was deemed to be significantly impacted at RBI values less than or equal to 0.30. Impacted stations generally have a low total number of species present, few crustacean species, the presence of negative (pollution tolerant) species and absence of positive (pollution sensitive) species.

Sediment chemistry pollutant concentrations were compared to existing sediment quality guideline values proposed for evaluation of sediment contamination. These guidelines were developed through empirical observation of large data sets, containing matching sediment chemistry and biological effects (toxicity) data to provide guidance for evaluating the probability that measured contaminant concentrations may contribute to observed biological effects. Sediment concentrations that exceed the “probable effects level” are usually associated with toxicity.

Two different “probable effects level” measures (see Table 3-3) have been used for this assessment: the Effects Range-Median (ERM) values developed by the National Oceanographic and Atmospheric Administration (Long, E.R., L.J. Field and D.D. MacDonald, 1998, Predicting Toxicity in Marine Sediments with Numerical Sediment Quality Guidelines, *Environmental Toxicology and Chemistry* 17(4): 714-727) and the Probably Effects Level (PEL) developed by the State of Florida (MacDonald, D.D., 1994, Approach to the Assessment of Sediment Quality in Florida Coastal Waters, Prepared for the Florida Department of Environmental Regulation, MacDonald Environmental Services, Ltd., Ladysmith, British Columbia). If sediment concentrations for a given pollutant exceeded either or both of the probable effects level thresholds, sediments were deemed to be impaired due to this constituent.

Tissue concentrations based on samples of fish filets or whole mussels were compared to maximum tissue residue levels (MTRLs). See Table 3-3. MTRLs are objectives developed to protect human health from consumption of fish or shellfish that contain substances at levels which could result in significant human health problems. MTRLs were developed by State Water Resources Control Board staff for use in evaluating data collected by the SMW and TSMP (Del Rasmussen, State Water Resources Control Board, Division of Water Quality, personal communication). These MTRLs are based on water quality objectives adopted by the State of California (e.g., California Ocean Plan, California Toxics Rule) and are calculated using human health consumption criteria and bioconcentration factors recommended by the US EPA. If tissue concentrations of a given pollutant exceeded MTRL values, the organism was deemed to be impaired due to this constituent.

Tissue concentrations based on whole body samples of fish were compared to National Academy of Sciences (NAS) guidelines, which represent objectives to protect the organisms that contain the toxic substances, as well as the species that consume these contaminated organisms. See Table 3-3. These guidelines have not been updated since they were published in 1973; consequently, the recommended maximum concentrations for toxic substances are considered to be too high to be protective for all waterbodies in the region, but they can be used to identify highly contaminated areas.

Previous water quality assessments utilized the “elevated data level” (EDL) approach to identify impaired waterbodies. However, State Board, Regional Board and US EPA staff agree that the EDL is not a sufficient assessment guideline alone for determining impairment, therefore listings of impairment based solely on EDL exceedances have been dropped from the current water quality assessment. EDLs are not water quality standards; they simply represent a statistical comparison measure that ranks a given concentration of a particular substance with previous data collected for a specified monitoring program. State Board has used EDL calculations (usually EDL 85 or EDL 95, representing the 85<sup>th</sup> or 95<sup>th</sup> percentile of the entire set of measurements in the database) to describe unusually high chemical concentrations found within its State Mussel Watch, Toxic Substances Monitoring and Bay Protection and Toxic Cleanup Programs, and to compare findings in a particular area or region with the larger database of findings from all over the state. However, as State Board has indicated in the data reports for these programs, EDLs are not directly related to potentially adverse human or animal health effects; they do not assess adverse impacts, nor do they necessarily represent concentrations that may be damaging to organisms or to a human consuming these species. In addition, there is no direct relationship to MTRL levels or NAS guidelines.

**Assessment of Impairment.** Beneficial uses have been listed as impaired based upon exceedances of the thresholds or guidelines described above. We often have only a limited number of sample results for a given waterbody, due to the expense of collecting and analyzing sediment chemistry, sediment toxicity, benthic infaunal community and bioaccumulation data. Therefore, we have required a minimum number of two samples to assess each waterbody (in some cases, two different types of samples may have been collected during the same sampling event). For these data types, we prefer to use a weight-of-evidence approach to determine impairment of beneficial uses. Ideally, we look for both contamination of the environment (i.e., sediment chemistry exceedances) and adverse biological impacts (i.e., sediment toxicity, bioaccumulation or benthic community degradation). Unfortunately, for many waterbodies, we lack sediment chemistry data and have relied only upon biological impact measures to determine impairment. However, we have not listed beneficial uses as impaired solely on the basis of sediment chemistry exceedances.

We have removed listings of impairment in cases where recent data suggests that the beneficial use is no longer impacted, due to improvements in water quality reflected by elimination of previously observed exceedances of thresholds or guidelines. We also have removed listings of impairment in cases where the previous listings were based on thresholds or guidelines that are now deemed to be insufficient for determining impairment (e.g.,

Elevated Data Levels calculated from the BPTCP, SMW or TSM databases; Median International Standards (MIS) based on a Food and Agriculture Organization of the United Nations survey of health protection criteria used by member nations) (refer to Toxic Substances Monitoring Program 1994-95 Data Report by State Water Resources Control Board, October 1997, for a discussion of EDL and MIS guidelines) or where standards have changed (e.g., MTRLs for arsenic and chromium no longer exist, since the California Toxics Rule does not include human health consumption criteria for these compounds).

Table 3-3. Assessment guidelines for sediment chemistry and bioaccumulation data

<b>Constituent</b>	<b>Sediment ERM</b>	<b>Sediment PEL</b>	<b>Tissue MTRL (inland)</b>	<b>Tissue MTRL (bay/estuary)</b>	<b>Tissue MTRL (ocean) (ppb)</b>	<b>NAS guidelines (ppb)</b>
Arsenic	70 ppm	41.6 ppm				
Cadmium	9.6 ppm	4.21 ppm				
Chromium	370 ppm	160.4 ppm				
Copper	270 ppm	108.2 ppm				
Lead	218 ppm	112.2 ppm				
Mercury	0.7 ppm	0.7 ppm	0.37 ppm	0.37 ppm		500
Nickel	51.6 ppm	42.8 ppm	28.7 ppm	220 ppm		
Silver	3.7 ppm	1.77 ppm				
Zinc	410 ppm	271 ppm				
Aldrin			0.05 ppb	0.33 ppb	0.1	100 [1]
Total chlordane	6 ppb	4.79 ppb	8.0 ppb	8.3 ppb	0.32	100 [1]
P,p'-DDD			44.5 ppb	44.5 ppb		
P,p'-DDE	27 ppb	374.17 ppb	32.0 ppb	32.0 ppb		
P,p'-DDT		4.77 ppb	32.0 ppb	32.0 ppb	9.1	
Total DDT	45.1 ppb	51.7 ppb				1000
Dieldrin			0.65 ppb	0.7 ppb	0.2	100 [1]
Endosulfan I			29700 ppb	64800 ppb		
Endosulfan II			29700 ppb	64800 ppb		
Endosulfan sulfate			29700 ppb	64800 ppb		
Endosulfan						100 [1]
Endrin	45 ppb		3020 ppb	3020 ppb		100 [1]
Alpha HCH			0.5 ppb	1.7 ppb		
Beta HCH			1.8 ppb	6.0 ppb		
Gamma HCH		0.99 ppb	2.5 ppb	8.2 ppb		
Hexachloro-cyclohexane						100 [1]
Heptachlor			2.4 ppb	2.3 ppb	8.1	100 [1]
Heptachlor epoxide			1.1 ppb	1.2 ppb		100 [1]
HCB			6.5 ppb	6.7 ppb	2.0	100
Total PCB	180 ppb	188.8 ppb	5.3 ppb	5.3 ppb	0.6	500
Toxaphene			9.6 ppb	9.8 ppb	2.75	100 [1]
Total PAH	44792 ppb	16771 ppb				

[1] Individually or in combination. Chemicals in this group are referred to collectively as Chemical Group A.

### 3.2 Recreational Use Assessment Guidelines

One of the goals of the federal Clean Water Act is that all waterbodies of the nation be "swimmable." Many of the waterbodies of the Los Angeles region are designated as "swimmable" or usable for water contact recreation. Some of these designated waterbodies, however, are inaccessible due to gates and fences installed for flood control or drinking water

reservoir protection purposes. In spite of this, residents, homeless individuals and occasionally children often gain access and use these areas. Therefore, all waterbodies with a water contact recreation use have been included in this report.

Assessment of primary contact recreational uses is based on closure and posting data for bathing areas and coliform bacteria data (Table 3-4). Bathing closure and posting data was acquired from the State Board, which compiles this data on an annual basis from local health departments. Inland surface water coliform data is not collected on a frequent basis; only fecal coliform standards are used. Dry weather beach data are collected frequently, weekly or daily, in the surfzone by major ocean dischargers and by the Los Angeles County Department of Health Services. Wet weather coliform data is collected less frequently in general. Beach data are compared to Ocean Plan standards, which include both total and fecal coliform objectives.

Additional factors such as persistent scum, oily films, excessive algae growth, significant trash, and persistent observations of non-natural foam and/or odor were also considered where data were available.

### 3.2.1 Secondary Contact Recreation Use

Most of the waterbodies of the region are also designated for non-contact recreational use. This use includes activities where water is not normally ingested. The assessment for this use includes many of the same factors as for primary contact recreation, but the standards are less stringent for coliform bacteria.

Table 3-4. Assessment Guidelines for Recreational Use Support

<b><i>Water contact and non contact recreation: Total and fecal coliform</i></b>	
Fully supporting	Geometric mean fecal coliform objective met and/or 10% threshold fecal coliform objective met.
Partially supporting	Geometric mean met, but greater than 10% of samples exceed fecal coliform density of 400 per 100 ml or total coliform density of 10,000 per 100 ml, or greater than 20% of samples exceed total coliform density of 1,000 per 100 ml.
Not supporting	Geometric mean exceeded.
<b><i>Water contact recreation: Beach postings</i></b>	
Fully supporting	Less than 10% of days per year of beach postings due to high bacterial indicator densities.
Partially supporting	No guideline
Not supporting	Greater than 10% of days per year of beach postings due to high bacterial indicator densities.
<b><i>Water contact recreation: Beach and inland bathing area closure</i></b>	
Fully supporting	No bathing area closures or restrictions in effect during past 3 years.
Partially supporting	On average, one bathing area closure per year of less than 1 week's duration.
Not supporting	On average, one bathing area closure per year of greater than 1 week's duration, or more than one bathing area closure per year.

### 3.3 Fish and Shellfish Consumption Use

Fish and shellfish consumption use is assessed based on status of fishing advisories and bioaccumulation data. Guidelines for use of advisory data are listed in Table 3-5.

Bioaccumulation standards are described above under aquatic life use.

Table 3-5. Assessment Guidelines for Fish/Shellfish Consumption Use

<b><i>Fish and shellfish consumption use: Advisories</i></b>	
Fully supporting	No fish or shellfish restrictions or bans are in effect.
Partially supporting	"Restricted consumption" of fish or shellfish in effect; or a fish or shellfish ban in effect for a subpopulation that could be at potentially greater risk, for one or more fish or shellfish species.
Not supporting	"No consumption" of fish or shellfish ban in effect for general population, for one or more fish or shellfish species; or commercial fishing or shellfishing ban in effect.

### 3.4 Drinking Water Use Assessment Guidelines

Assessment of the use of waterbodies in the region for drinking water is based on concentrations of constituents that are regulated for drinking water. In this 305(b) report, ambient or raw (untreated) surface and ground waters are assessed. (Note that such water would be treated and disinfected, in accordance with requirements from the State Department of Health Services, prior to distribution for potable use). Contaminants that are generally not source-water related (e.g., corrosion byproducts, lead or copper from distribution system, or TTHMs) are not considered. Assessment of waterbodies for drinking water use differs from other uses in that median rather than mean of data is considered. Table 3-6 lists the guidelines for assessment.

Currently, all waterbodies in the region are designated as at a minimum potential MUN per the 1988 State Board Sources of Drinking Water Policy (SODW). A large number of waterbodies, however, were footnoted in the 1994 Basin Plan as being eligible for review and possible exemption status. The Regional Board staff is currently working toward a long-term policy for regulating water bodies designated potential MUN under the SODW policy. Waterbodies that were designated potential MUN under the SODW are assessed using Title 22 standards only.

Table 3-6. Assessment Guidelines for Drinking Water Use (MUN)

<b><i>Municipal and Domestic Supply: Chemical constituents (Title 22, nitrogen species)</i></b>	
Fully supporting	No contaminants where the median concentration exceeds the state water quality standard.
Fully supporting but threatened	No contaminants where the median concentration exceeds the state water quality standards, but greater than 10% of samples exceed the objective.
Partially supporting	The median concentration of a contaminant(s) exceeds water quality standards.
Not supporting	No guideline

### 3.5 Agriculture Use and Waterbody-specific Objectives Assessment Guidelines

Water quality standards can vary by area and by crop. Due to a lack of state or federal standards, assessment of water quality for agricultural use is based upon local guidelines specified in Table 3-8 of the Basin Plan. The Basin Plan also includes waterbody specific objectives for TDS, Sulfate, Chloride, Boron, Nitrogen and SAR. These are assessed using the guidelines in Table 3-7.

Table 3-7. Assessment Guidelines for Agriculture Use and Waterbody Specific Objectives

<b><i>Agriculture use and Waterbody-specific objectives: Chemical constituents</i></b>	
Fully supporting	For any one pollutant or stressor, criteria exceeded in <= 10 percent of measurements or observations.
Partially supporting	For any one pollutant or stressor, criteria exceeded in 11 to 25 percent of measurements or observations.
Not supporting	For any one pollutant or stressor, criteria exceeded in > 25 percent of measurements or observations.

## 4 Summary of Assessment Results

A total of 188 changes to the 1998 303(d) list are proposed; 116 new listings are proposed and 72 de-listings are proposed. The net change to the 1998 303(d) list is the addition of 44 waterbody segment/pollutant combinations. See Table 4-1 for a summary of the proposed changes by watershed and type of impairment.

Of the new listings, 84 are related to water chemistry, water column toxicity and bacterial indicators (see Table 4-2), while 32 are related to tissue, sediment or benthic community impairments (see Table 4-3). The new listings based on water chemistry, water column toxicity and bacterial indicators are broken down as follows: bacteria (24); metals (21); nitrogen and its effects (15); chloride, TDS, sulfate, boron (12); pH (5); sedimentation (2); organics (2); trash (1); toxicity (1); and unnatural foam/scum (1). The new listings based on tissue, sediment or benthic community impairments are broken down as follows: tissue (6); sediment chemistry (20); benthic community degradation (3); and sediment toxicity (3). Note that a single waterbody segment may have multiple impairments (e.g., impairments for tissue and sediment chemistry).

Of the de-listings, 5 are related to water chemistry, water column toxicity and bacterial indicators (see Table 4-4), while 67 are related to removal of tissue, sediment or benthic community impairment listings (see Table 4-5). The water chemistry and water column toxicity de-listings are broken down as follows: dissolved oxygen (3) and toxicity (2). The tissue, sediment and benthic community de-listings are broken down as follows: tissue (57); sediment (9); and benthic community (1). The majority of the tissue de-listing are proposed because the original listing was based on tissue concentrations exceeding Elevated Data Levels (EDLs), a guideline that was later determined by the State Board to be insufficient for determining impairment (SWRCB 1997).

The proposed de-listings would eliminate 11 TMDL analytical units as specified in the Consent Decree between the U.S. EPA and Heal the Bay, Inc. et al. filed on March 22, 1999. See Table 4-6. The proposed new listings would add twelve new TMDL analytical units as follows:

- Calleguas Creek bacteria;
- Ballona Creek pH;
- Avalon Beach beach postings;
- San Gabriel River Estuary trash;
- McCoy Canyon Creek (LA River) nitrate;
- Santa Clara River salts;
- Los Cerritos Channel sediment toxicity;
- Peninsula Beach beach postings;
- Ormond Beach beach postings;
- Channel Islands Harbor Beach and Hobie Beach bacteria;
- Surfer's Point and Seaside Park bacteria and beach postings; and
- Ventura River bacteria.

Fact sheets are provided for proposed new listings and delistings. In Table 1 of each fact sheet is information that will be included in the 2002 303(d) list, such as the waterbody segment and size affected by the impairment, the pollutant causing the impairment, and the TMDL priority and TMDL start and end dates. Most of the proposed new listings can be folded into existing TMDL Analytical Units specified in the Consent Decree. Deadlines for completion of these TMDL Analytical Units have been scheduled through the Consent Decree. Therefore, instead of assigning a TMDL priority to these proposed new listings, staff identified the existing TMDL Analytical Unit under which the proposed new listing would be placed and indicated the prescribed start and end dates for the TMDL.

In cases where the proposed new listing could not be folded into an existing TMDL Analytical Unit, staff identified the new listing as a low priority, to be started after the Consent Decree commitments are met. The assignment of a low priority to these new TMDL analytical units is not a reflection on their importance, but is given because the Regional Board must first meet existing Consent Decree commitments before beginning new TMDLs. These new TMDL analytical units would be started no sooner than 2011 and end no later than 2014, twelve years after the original listing of the waterbody and pollutant combination.



## **5 Data Relied Upon**

### **5.1 Reports and Information**

Aquatic Bioassay and Consulting Laboratories. The Marine Environment of Marina del Rey Harbor, Reports to the Department of Beaches and Harbors, County of Los Angeles, July 1995-June 1996; July 1996-June 1997; July 1997-June 1998; July 1998-June 1999.

California Department of Fish and Game, Office of Spill Prevention and Response, Water Pollution Control Laboratory. 1998. A Water Quality Inventory Series: Biological and Physical/Habitat Assessment of California Water Bodies, Calleguas Creek Characterization Study, Benthic Macroinvertebrates (November 1998).

California Office of Environmental Health Hazard Assessment. 2001. California Sport Fish Consumption Advisories. June 2001.

City of Los Angeles, Bureau of Sanitation. 2001. Low-Flow Diversion of Dry-Weather Runoff. Report to City of Los Angeles' Environmental Quality and Waste Management Committee, January 11, 2001.

Jones, Howard M. Letter with photographs from Howard M. Jones, Trustee, Lena Jones Trust, to Melinda Becker, Los Angeles Regional Water Quality Control Board, dated April 26, 2001.

Larry Walker and Associates. 2000. Calleguas Creek Characterization Study: Results of the Coordinated Water Quality Monitoring Program, Surface Water Element.

Masoner, Kim. Letter with photographs from Kim Masoner, President, Seal Beach Chamber and Business Association, to Renee DeShazo, Los Angeles Regional Water Quality Control Board, dated May 11, 2001.

MEC Analytical Systems. Report of Testing of Sediments Collected from Marina del Rey Harbor, California, Submitted to US Army Corps of Engineers, Los Angeles District, February 1998; February 1999.

MEC Analytical Systems. 1998. Results of Physical, Chemical and Bioassay Testing of Sediments Collected from the Los Angeles River Estuary, Report to US Army Corps of Engineers, Los Angeles District (September 1998).

US Army Corps of Engineers, Los Angeles District. 1999. The Port of Hueneme, California, Deep Draft Navigation Feasibility Study, Final Feasibility Report (August 1999).

US Army Corps of Engineers, Los Angeles District. 1997. Final Environmental Assessment for Los Angeles River Estuary Maintenance Dredging, Long Beach, California (July 1997).

US Department of Agriculture, Natural Resources Conservation Service. 1995. Calleguas Creek Watershed Erosion and Sediment Control Plan for Mugu Lagoon, Ventura and Los Angeles Counties, California (May 1995).

## **5.2 External Data by Organization**

Camarillo Sanitary District. Receiving water data.

Casitas Municipal Water District

City of Calabasas. Adopt-A-Creek water quality data.

City of Los Angeles. L.A.-Glendale and Tillman Water Reclamation Plants' receiving water data.

City of San Buenaventura

City of Thousand Oaks. Conejo Creek supplemental data.

City of Thousand Oaks. Hill Canyon and Olsen Road WWRPs' receiving water data.

County of Los Angeles, Department of Public Works. Stormwater monitoring data.

California Department of Water Resources, Southern District.

Heal the Bay. Bioassessment and physical habitat assessment data for Malibu Creek watershed.

Las Virgenes Municipal Water District. Tapia Water Reclamation Facility receiving water data.

Los Angeles County Sanitation Districts. Long Beach, Los Coyotes, Pomona, San Jose Creek, Saugus, Valencia and Whittier Narrows Water Reclamation Plants' receiving water data.

Ojai Valley Sanitation District.

Santa Barbara ChannelKeeper. Ventura River Watershed Monitoring Program.

Santa Monica BayKeeper. BeachKeeper Program: Citizen Water Quality Monitoring Data (January 1996-May 2001). Volumes I & II.

State Water Resources Control Board. Bay Protection and Toxic Cleanup Program.

State Water Resources Control Board. Beach Closure Report.

State Water Resources Control Board. Calleguas Creek toxicity monitoring data.

State Water Resources Control Board. State Mussel Watch Program.

State Water Resources Control Board. Toxic Substances Monitoring Program.

United Water Conservation District.

Ventura County Department of Health Services. Shoreline bacteriological data.

## 6 References

California Department of Fish and Game. 1998. Sediment Chemistry, Toxicity and Benthic Community Conditions in Selected Water Bodies of the Los Angeles Region, Final Report to California State Water Resources Control Board, Bay Protection and Toxic Cleanup Program, August 1998.

Federal Register. 2000. Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California; Rule (California Toxics Rule). 40 CFR Part 131. May 18, 2000.

Harrington, James M. 2001. Letter from James M. Harrington, California Department of Fish and Game, to Jonathan S. Bishop, Los Angeles Regional Water Quality Control Board, dated December 6, 2001.

MacDonald, D.D. 1994. Approach to the Assessment of Sediment Quality in Florida Coastal Waters, Prepared for the Florida Department of Environmental Regulation, MacDonald Environmental Services, Ltd., Ladysmith, British Columbia.

Long, E.R., L.J. Field and D.D. MacDonald. 1998. Predicting Toxicity in Marine Sediments with Numerical Sediment Quality Guidelines, Environmental Toxicology and Chemistry 17(4): 714-727.

Los Angeles Regional Water Quality Control Board. 2001. Letter to Interested Persons dated March 5, 2001.

Los Angeles Regional Water Quality Control Board. 1996. 1996 California Water Quality Assessment – 305(b) Report Supporting Documentation for Los Angeles Region.

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State Water Resources Control Board. 2001a. Memo to Regional Board Executive Officers from Stan Martinson, Chief, Division of Water Quality, regarding “Solicitation of Water Quality Information.”

State Water Resources Control Board. 2001b. Letter to Interested Persons from Stan Martinson, Chief, Division of Water Quality, dated March 14, 2001.

State Water Resources Control Board. 2000. State Mussel Watch Program 1995-1997 Data Report (September 2000).

State Water Resources Control Board. 1997a. Water Quality Control Plan, Ocean Waters of California (Ocean Plan).

State Water Resources Control Board. 1997b. Toxic Substances Monitoring Program 1994-95 Data Report (October 1997).

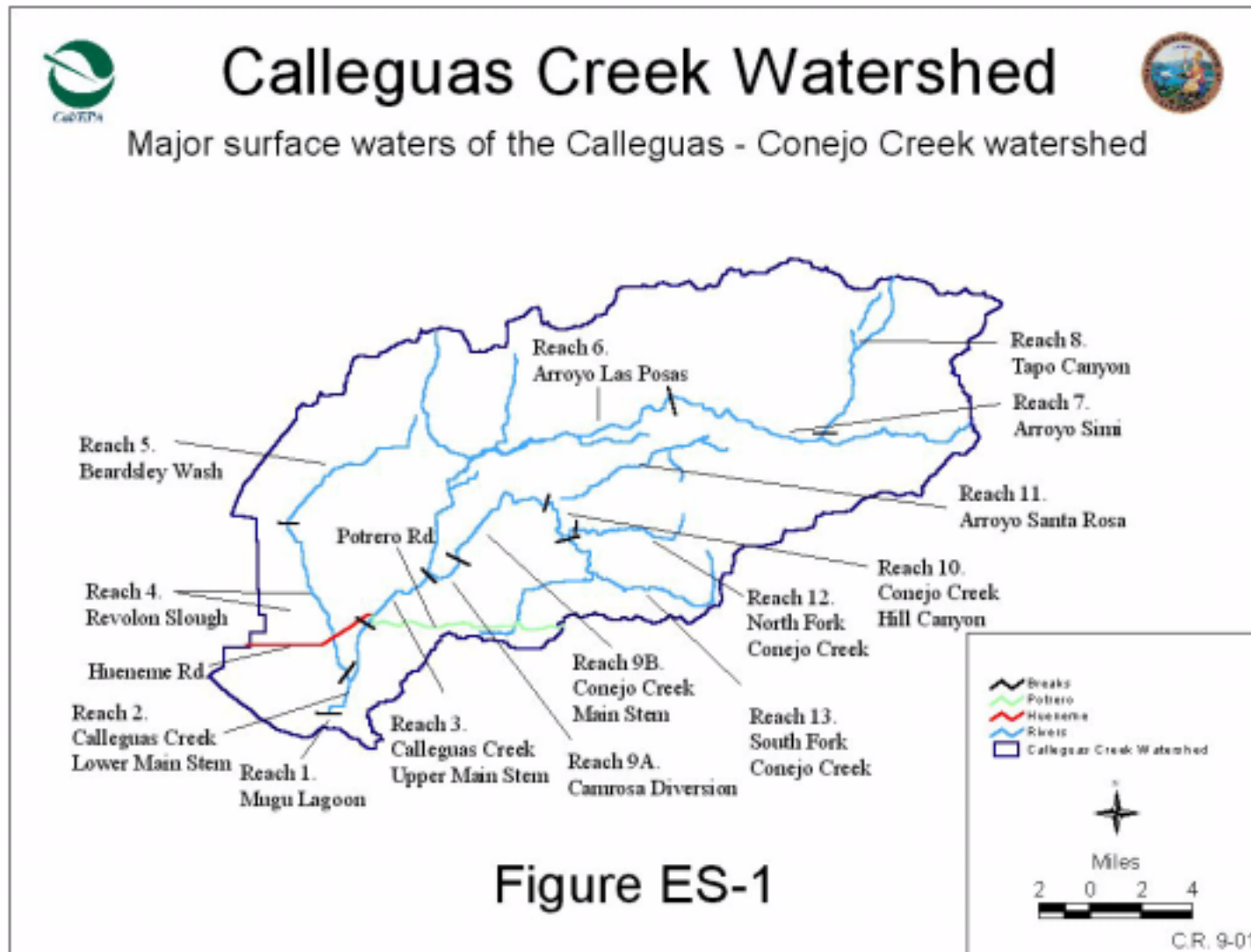
United States Environmental Protection Agency. 1997. *Guidelines for Preparation of the Comprehensive State Water Quality Assessments (305(b) Reports) and Electronic Updates: Supplement*.

## APPENDIX A: Calleguas Creek Reach Descriptions

Reach No.	Reach Name	Geographic Description	1998 303(d) List Reach Name	Basin Plan Reach Name
1	Mugu Lagoon	Lagoon fed by Calleguas Creek	Mugu Lagoon Rio de Santa Clara/Oxnard Drain # 3 (tributaries)	Mugu Lagoon 403.11
2	Calleguas Creek South	Downstream (south) of Potrero Road	Calleguas Creek Reach 1 Duck Pond Ag Drain/Mugu Drain /Oxnard Dr. (tributaries)	Calleguas Creek Estuary 403.11 Calleguas Creek 403.11
3	Calleguas Creek North	Potrero Road upstream to confluence Conejo Creek	Calleguas Creek Reach 3	Calleguas Creek 403.11
4	Revolon Slough	Revolon Slough from confluence with Calleguas Creek Estuary to Central Avenue	Revolon Slough	Revolon Slough 403.11
5	Beardsley Wash	Revolon Slough upstream of Central Avenue	Beardsley Channel	Beardsley Wash 403.61
6	Arroyo Las Posas	Confluence with Conejo Creek to Hitch Road	Arroyo Las Posas Reaches 1 and 2 Fox Barranca (tributary)	Calleguas Creek 403.12 Arroyo Las Posas 403.12; 403.62
7	Arroyo Simi	End of Arroyo Las Posas (Hitch Rd) to headwaters in Simi Valley	Arroyo Simi Reaches 1 and 2	Arroyo Simi 403.62; 403.67
8	Tapo Canyon	Confluence with Arroyo Simi up Tapo Canyon to headwaters	Tapo Canyon Reach 1	Tapo Canyon Creek 403.66; 403.67; Gillibrand Canyon Creek 403.66; 403.67
9A	Conejo Creek	Extends from the confluence with Calleguas Creek to the Camrosa Diversion	Conejo Creek Reach 1	403.12 Arroyo Conejo 403.64
9B	Conejo Creek main stem	Extends from Camrosa Diversion to the Confluence with Arroyo Santa Rosa	Conejo Creek Reaches 1 and 2	Arroyo Conejo 403.64
10	Hill Canyon reach of	Confluence with Arroyo Santa Rosa to	Conejo Creek Reach 2	Arroyo Conejo 403.64

Reach No.	Reach Name	Geographic Description	1998 303(d) List Reach Name	Basin Plan Reach Name
	Conejo Creek	confluence with N. Fork; and N. Fork to just above Hill Canyon WWTF	Conejo Creek Reach 3 Conejo Creek/ Arroyo Conejo North Fork	
11	Arroyo Santa Rosa	Just upstream from the confluence with Conejo Creek to headwaters	Arroyo Santa Rosa	Arroyo Santa Rosa 403.63; 403.65
12	North Fork Conejo Creek	From just above Hill Canyon WWTF to headwaters of the North Fork	Conejo Creek North Fork	North Fork Arroyo Conejo 403.64
13	South Fork Conejo Creek	Confluence with N. Fork to headwaters of the South Fork—two channels	Conejo Creek Reaches 3 and 4 Conejo Creek South Fork	Arroyo Conejo 403.68

## Map of Calleguas Creek Watershed Stream Reaches used in 2002 Water Quality Assessment





## **APPENDIX B: 2002 Revisions to 1998 303(d) List**

*(Revisions to 1998 303(d) list shown in underline/strikeout)*